

Appl. No. 10/756,269  
Amdt. dated September 15, 2008  
Reply to Office Action of April 14, 2008

**Amendments to the Drawings:**

There are no amendments to the drawing figures.

## **REMARKS/ARGUMENTS**

### **Amendment to the Specification and Claims**

The specification has been amended to focus on the disclosed method for bowel cleanout. Specifically, the disclosed method describes the use of disodium phosphate to initiate the flow of diarrhea and polyethylene glycol to maintain the flow of diarrhea for a thorough bowel clean-out. Further, an additional adjuvant is included in this application. Extraneous material has been removed. A clean copy of the specification as amended appears at Tab A.

The addition of the adjuvant is the new matter which distinguishes this application from co-pending parent application Serial No. 10/194,251 filed July 15, 2002.

Claims 1-66 have been canceled from this application. A new method claim, Claim 67, is the only claim now pending. New Claim 67 describes a method using a solution containing PEG and disodium phosphate to induce hypermotility in the bowel resulting in a clean colon for examination. The new Claim 67 differs from the prior claim in that the disclosed method describes the use of disodium phosphate to initiate the flow of diarrhea and polyethylene glycol to maintain the flow of diarrhea for a thorough bowel clean-out. Further, an additional adjuvant is included in this application.

A clean copy of claim 67 appears at Tab B

No new matter has been added to the amended specification or new claim.

### **The First Rejection - Obviousness**

The U.S. Patent and Trademark Office has rejected Claims 1-9, 13-41, 54-66 under 35 U.S.C. 103(a) as being unpatentable over WO 98/43654 in view of Cleveland

et al. (US Pat. 6,048,901), Di Palma et al., Wood et al. (US Pat. 5,498,425), Vining (US Pat. 5,782,762), Robb-Nicholson, Christine et al. (US Pat. 3,330,311), Matsuoka et al. and Afridi et al.

### **35 U.S.C. 132 Rationale**

For the convenience of the Examiner and to demonstrate proper consideration by the Applicant of the rationale used to reject the previously pending claim, the rationale appearing in the Office Action dated April 14, 2008 is generally repeated below as best understood by the Applicant.

In support of the First Rejection, the U.S. Patent and Trademark Office cites as a primary reference WO 98/43654 for the teaching of a composition and method of purging the colon prior to colonoscopy, radiographic examination or bowel surgery containing sodium phosphate salts (including mono and dibasic salts) combined with polyethylene glycol and bisacodyl and that the composition can be administered in solid or liquid (aqueous) form (Pgs. 1, 7, 11). It is taught that combination of compounds are present in amounts effective to produce a purgative and/or laxative composition and that one of ordinary skill in the art may readily determine the amount and types of compounds/compositions to used in treating a particular patient (Pg. 11).

The U.S. Patent and Trademark Office then adds Cleveland et al. as a secondary reference for the teaching that polyethylene glycol is effective in reducing intestinal gases, cramping and/or anorectal irritation associated with constipation and which can be exacerbated by use of laxatives (Column 1, lines 14-30). It is taught by the Cleveland et al. reference that the composition is preferably substantially free of

ancillary electrolytes as salts may exert a constipative effect (Column 45-58). It is further taught by the Cleveland et al. reference that the PEG polymer used is solid at room temperature and soluble with water and may be mixed with water or juice (Column 1, lines 58-68, Column 2, lines 1-20).

Another secondary reference, the Di Palma et al. reference is cited for the teaching that the use of PEG-3350 at 68 g and 85 g, in 500 ml flavored water, resulted in complete evacuation within 24 hours and 51 g of PEG-3350 resulted in 80% evacuation within 24 hours (Page S148). The Di Palma reference is also cited for the teaching that there were no changes in measured electrolytes, calcium, glucose, BUN, creatinine or serum osmolality (page S148).

Still another secondary reference, the Wood et al. ('425) reference is cited for the teaching that bisacodyl is used for bowel clearance. It is taught that powders may be packaged in aluminum lined paper containers and that such packets are economical and easier to ship and store (Column 1, lines 6-12, Column 3, lines 4-7).

Yet another secondary reference, the Vining reference is cited for the teaching that in addition to using laxatives the patient should be put on a clear liquid diet to obtain a clean bowel for examination (Column 8, lines 1-20).

And another secondary reference, Robb-Nicholson reference is cited for the teaching that preparations for sigmoidoscopy will vary among doctors (Full Text). A preparation is disclosed where a clear liquid diet, which can include water, clear soup, iced tea, juice or gelatin, is implemented the morning of the day before the procedure

and two 1½ doses of Fleet Phospho-soda, added to a glass of water or juice, one at 5pm and the other at 8pm, are taken by the patient (Full Text).

And, still another secondary reference, the Christine et al. reference is cited for the teaching that packets containing powdered tea, soups, beverage mixes and the like, wherein the packets can subsequently be used in any desired manner including formulating or making beverages by using hot or cold water (Column 6, lines 36-45).

And, yet another secondary reference, the Matsuoka et al. reference is cited for the teaching that the combination of 45 ml of oral sodium phosphate (Fleet®) diluted with 45 ml of water and 1000 ml of PEG electrolyte lavage which was tolerated well and resulted in satisfactory cleansing of the colon (Page 192, Abstract). It is disclosed that this modified method using smaller amount of oral lavage is useful in the preparation for colonoscopy (Page 192, Abstract). It is disclosed that 100 ml of Fleet® contains 48 g of sodium biphosphate, 18 g sodium phosphate and 100 ml of water (Page 189). It is disclosed that one drawback of the above combination is that the patient may experience nausea due to salty taste, however, that there was no serious side effects (Page 191).

And finally the Afridi et al. reference is cited for the teaching that the combination of two 1½ ounce doses of Fleet Phospho-Soda, each dose with 4 ounces of water, and bisacodyl taken the night before the colonoscopy (Page 486, Materials and Methods). It is disclosed by the Afridi et al. reference that PEG-ES lavage is in use because it allowed rapid cleansing of the colon, however, that about 5%-20% patients have difficulty in drinking the large volume of liquid (4L) required or may not be allowed to

complete the preparation because of nausea, vomiting or abdominal discomfort (pg. 488). It is disclosed that this has led to the search for alternative, rapidly acting preparations that require less fluid intake and are easier to tolerate (Page 488). It is disclosed that patients found preparation with sodium phosphate-bisacodyl to be significantly easier with the PEG-ES lavage and that 20% of patients undergoing PEG-ES lavage were unable to complete the preparation compared with only 4.2% of patients prepared with sodium phosphate-bisacodyl (page 488).

It is the opinion of the U.S. Patent and Trademark Office that the prior art discloses the combination of sodium phosphate salts with one or more purgative or laxative compounds, including PEG and bisacodyl, for evacuating the bowel for colonoscopy. The difference between the prior art and the claimed invention is that the prior art does not expressly disclose the combination sodium phosphate and PEG for use as a bowel cleanser which does not contain additional electrolytes. However, the prior art amply suggests the same as the prior art discloses the combination of PEG and sodium phosphate for use as a bowel cleanser, that PEG can be used without ancillary electrolytes and that PEG mixed with 500 ml of water is effective as a laxative without there being changes in measured electrolytes.

As such, the U.S. Patent and Trademark Office opines that it would have been well within the skill of and one of ordinary skill in the art would have been motivated to modify the prior art as above with the expectation that the combination of PEG and sodium phosphate would be effective as a bowel cleanser for use in clearing bowel prior to examination procedures without the use of other electrolytes.

Further, the U.S. Patent and Trademark Office opines that the prior art discloses that clear liquid diets are typically used in preparation of colonoscopy, that clear liquid diets can include water, soups, teas and juices and powdered products in packets, including soups, teas and juices, that can be reconstituted with hot or cold water. As such, it would have been well within the skill of one ordinary skill in the art to combine packets of the powdered colonic purgative with packets of clear liquid diet powders, such as soups, teas and juices, with the expectation that said combination would be convenient for the patient as the patient would not have to separately obtain the necessary components for a clear liquid diet and the packets would clearly, by virtue of not having the liquid component, be less bulky than the reconstituted products.

Furthermore, the U.S. Patent and Trademark Office opines the prior art discloses the combination of sodium phosphates with bisacodyl that the same is effective in cleansing the colon and is well tolerated versus PEG-ES lavage solutions. As such, one of ordinary skill in the art would expect that administration of bisacodyl would be a suitable adjunct for bowel cleansing.

Finally, in the opinion of the U.S. Patent and Trademark Office the prior art discloses amounts and doses of sodium phosphate salts and PEG that fall within the scope of or are near the claimed doses and amounts and are effective as laxatives and/or bowel cleanings. As such, it would have been well within the skill of and of ordinary skill in the art would have reason to use various amounts and doses as desired, including that claimed, depending on the desired effect of cleansing the bowel.

**Comparison to the New Method Claim 67 with the Cited Art**

None of the references cited by the U.S. Patent and Trademark Office teach not adding additional electrolytes or initiating diarrhea with disodium phosphate and then sustaining the flow of diarrhea with PEG.

The invention disclosed herein is a method of cleaning the colon or examination by colonoscopy. The method includes dissolving PEG and sodium phosphate powders in water and instructing the patient to consume the solution twice on the day before the colonoscopy procedure. The hypermotility produced by the sodium phosphate powder and then maintained by the PEG powder produces a clean colon for examination without the introduction of osmotic imbalance. No electrolytes are added to the PEG/disodium phosphate solution.

In the Office Action dated April 14, 2008, the United States Patent and Trademark Office has cited the following references: WO 98/43654, Cleveland et al. (US 6,048,901; hereinafter the Cleveland et al. '901 reference), Di Palma et al., Wood et al. (US 5,498,425; hereinafter the Wood et al. '425 reference), Vining (US 5,782,762; hereinafter the Vining '762 reference), Robb-Nicholson, Christine et al. (US 3,330,311; hereinafter the Christine et al. '311 reference), Matsuoka et al. and Afridi et al. The invention claimed herein is not anticipated by any of the cited references individually or in combination.

The primary reference, WO 98/43654, discloses a number of non-aqueous colonic purgative salt powders. These non-aqueous colonic purgative salt powders are taught as being useful for producing diarrhea which leads to a colon suitable for



examination. The powders are taken in capsule or tablet form by the patient and, in many cases, the dosage of each salt powder required to produce a clean colon, without inducing an osmotic imbalance, is left to the imagination of the user. There is no teaching that PEG powder is a component of this disclosure. There is no mention of any need for additional electrolytes to avoid osmotic imbalance.

The Cleveland et al '901 secondary reference discloses a method for treating rectal itch, bloating, gas and abdominal cramping by the use of PEG. It is mentioned, in passing, that the aforementioned symptoms are frequently associated with constipation. No other salts are combined with PEG in this disclosure. The use of additional electrolytes is not mentioned. The treatment is performed four times per day for a period of 14 days. At the end of this treatment period, the colon is not suitably prepared for examination by colonoscopy. However, in many cases the rectal itch is ameliorated.

The Di Palma et al. secondary reference discloses the use of PEG dissolved in 500 milliliters of solution as being useful for preparing the colon for examination. No sodium phosphate is added to the solution containing PEG. The use of electrolytes is not mentioned in the Di Palma et al. reference.

The Wood et al '425 secondary reference discloses a combination containing sodium bicarbonate, hydrated sodium phosphate, flavoring and other additives as a laxative. PEG is used with the combination as a lubricant. As set forth in the previously submitted Affidavit by Dr. Scheiner, laxatives are not used to prepare the colon for examination. Electrolytes such as bicarbonate and others are added to the composition disclosed therein.

The Vining '762 secondary reference discloses a method for preparing three dimensional pictures of internal bodily organs by computer assisted tomography (CAT). No PEG is used in the disclosed method. No sodium phosphate powder is used. It is mentioned that clear liquid diet is sometimes used to clear the colon for examination. A clear liquid diet is not part of the now pending method claim.

The Robb-Nicholson secondary reference discloses the use of Fleets phospho-soda as a bowel evacuant. No PEG is used. There is no mention of the use of additional electrolytes.

The Christine et al. '311 secondary reference discloses a method for filling packets with dry powders. Filling packets with dry powders is not a component of the now pending method claim.

The Matsuoka et al. secondary reference discloses the use of Fleets phospho-soda, PEG and additional electrolytes as a composition for obtaining a colon suitable for examination. The invention disclosed herein does not require any additional electrolytes.

Likewise, the Afridi et al. secondary reference discloses the use of sodium phosphate and PEG supplemented with electrolytes as a bowel evacuant for colonoscopy. The invention disclosed herein does not require the addition of supplemental electrolytes.

As discussed above, new claim 67 describes an invention which is not anticipated by or rendered obvious by the prior art already cited in the Office Action.

The invention which is now claimed is a method for cleansing the colon for examination by colonoscopy by using a solution including PEG powder and sodium phosphate powder while explicitly eliminating the need for additional electrolytes to treat the effects of osmotic imbalance.

It is the position of the applicant that the new method claim includes limitations not found in the prior art. Specifically, the new claim contains the following limitations not found in the prior art:

- first, initiating diarrhea by the use of a disodium phosphate powder dissolved in water; and
- second, maintaining the flow of diarrhea by the use of polyethylene glycol powder having a molecular weight of about 3000 Daltons to about 800 Daltons dissolved in water.
- including an optional adjuvant for the patient to add to the dissolved disodium phosphate/PEG solution before consumption.

### **Conclusion**

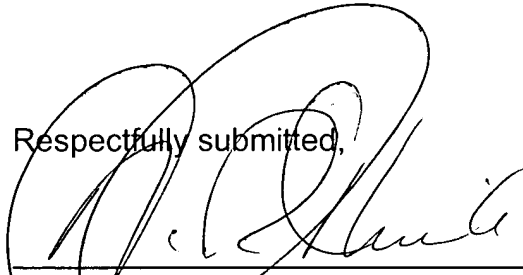
The invention disclosed herein is a method for cleansing the colon for examination by colonoscopy. The claimed method describes making a solution of polyethylene glycol powder and disodium phosphate powder in water. No electrolytes are added to the solution. The references cited by the United States Patent and Trademark Office either alone, or in combination cannot be combined to produce the steps in the method disclosed herein. Moreover, the art cited, in combination, would not

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make it obvious to a person of ordinary skill in the art to make and use the claimed method. For the foregoing reasons, new claim 67 is in a condition for allowance.

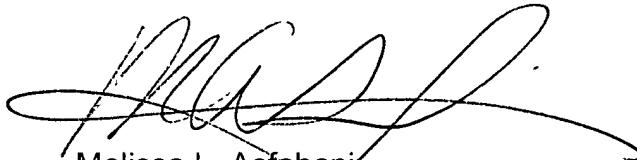
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